

Figure 1A

1	CCCACGCGTCCGGGGAGCTTGCACTAACATCTACAATGGCTTCTAAAAGCACAGATGAC	60
61	CTGCTACACTTCCTGACTTGCTTGCATTGGTGGCACTGTTCATAAATATAATTTGCTC	120
121	TTTCACTTTCTTGAAATGAGCAACCTGAATTACTCGGAGGAGAAAGGCAGGAGAGATA	180
181	GAGGCAGCAGAACGCCAGGGCAGCTGAAAGACAGAGACCTTCAGTCTGAACCAACAACAAG	240
241	CAAAGTTAAATTATGGATATCCAAGGGAGTCTATAGAAGGTCCATGCAAGACATTTGAC	300
301	TACTTGTCTGAACTAGATATCCCTTGAATGTGCACACAAAAAGTGAATGGGTCAATTGAT	360
361	AAGGGAAAATAGGTTCCAAGATGGCTGAATAGGAAGAGCTCCAGTCTGCAGATCCCAGT	420
421	GTGAGCAACGTGGAAGATGGGTGATTTCTGCATTTCCAATGAGCATGGAGAGAAAAATT	480
481	TATGTCCTTGCACCACATCCATCTCCGTATCAGAAATGGAACCAAATGGCACCTTCAGCAA 1 M E P N G T F S N 9	540
541	TAACAACAGCAGGAAC TGACAATTGAAAATTCAGAAAGAGAGAATTTCACATTGTATA 10 N N S R N C T I E N F K R E F F P I V Y 29	600
601	TCTGATAATATTTCTGGGGAGTCTGGAAATGGGTGTCCATATATGTTTCCTGCA 30 L I I F F W G V L G N G L S I Y V F L Q 49	660
661	GCCTTATAAGAAGTCCACATCTGTGAACGTTTCATGCTAAATCTGCCATTTCAGATCT 50 P Y K K S T S V N V F M L N L A I S D L 69	720
721	CCTGTTCATAGCACGCTTCCCTTCAGGGCTGACTATTATCTAGAGGCTCCAATTGGAT 70 L F I S T L P F R A D Y Y L R G S N W I 89	780
781	ATTTGGAGACCTGGCCTGCAGGATTATGTCTTATTCCCTGTATGTCAACATGTACAGCAG 90 F G D L A C R I M S Y S L Y V N M Y S S 109	840
841	TATTTATTCCTGACCGTGCTGAGTGTGCGTTCCCTGGCAATGGTTCACCCCTTCG 110 I Y F L T V L S V V R F L A M V H P F R 129	900

Figure 1B

901	GCTTCTGCATGTCACCAGCATCAGGAGTGCCTGGATCCTCTGTGGATCATATGGATCCT	960
130	L L H V T S I R S <u>A W I L C G I I W I L</u>	149
961	TATCATGGCTTCCTCAATAATGCTCCTGGACAGTGGCTCTGAGCAGAACGGCAGTGTAC	1020
150	<u>I M A S S I M L L D S G S E Q N G S V T</u>	169
1021	ATCATGCTTAGAGCTGAATCTCTATAAAATTGCTAAGCTGCAGACCATGAACATATATTGC	1080
170	S C L E L N L Y K I A K L Q T M N Y <u>I A</u>	189
1081	CTTGGTGGTGGGCTGCCCTGCTGCCATTTCACACTCAGCATCTGTTATCTGCTGATCAT	1140
190	<u>L V V G C L L P F F T L S I C Y L L I I</u>	209
1141	TCGGGTTCTGTTAAAAGTGGAGGTCCCAGAACATGGGGCTGCGGGTTCTCACAGGAAGGC	1200
210	R V L L K V E V P E S G L R V S H R K <u>A</u>	229
1201	ACTGACCACCATCATCACCTTGATCATCTTCTTCTGTGTTCCCTGCCCTATCACAC	1260
230	<u>L T T I I I T L I I F F L C F L P Y H T</u>	249
1261	ACTGAGGACCGTCCACTTGACGACATGGAAAGTGGTTATGCAAAGACAGACTGCATAA	1320
250	<u>L R T V H L T T W K V G L C K D R L H K</u>	269
1321	AGCTTTGGTTATCACACTGGCCTTGGCAGCAGCCAATGCCCTGCTCAATCCTTGCTCTA	1380
270	<u>A L V I T L A L A A A N A C F N P L L Y</u>	289
1381	TTACTTTGCTGGGAGAATTAAAGGACAGACTAAAGTCTGCACTCAGAAAAGGCCATCC	1440
290	<u>Y F A G E N F K D R L K S A L R K G H P</u>	309
1441	ACAGAAGGCAAAGACAAAGTGTGTTCCCTGTTAGTGTGTGGTTGAGAAAGGAAACAAG	1500
310	Q K A K T K C V F P V S V W L R K E T R	329
1501	AGTATAAGGAGCTCTAGATGAGACCTGTTCTGTATCCTGTGTCCATCTCATTCACT	1560
330	V *	331
1561	CATAGTCTCAAATGACTTGTATTTACATCACTCCAACAAATGTTGATTCTTAATATT	1620
1621	TAGTTGACCATTACTTTGTTAATAAGACCTACTTCAAAAATTTCAGTGTAAAAAA	1680
1681	AAAAAAAAAAAAAAAAAAAAAAA 1708	

Figure 2A

1 50

HGPRBMY11	(1) -----MSLQPSI SVSEMEPNG-----	-TFSNNNSRNCTHEN--FK
HGPRBMY11v1	(1) MERKFMMSLQPSI SVSEMEPNG-----	-TFSNNNSRNCTHEN--FK
P2Y5_CHICK	(1) -----	-MVSNCSTEDS-FK
P2YR_CHICK	(1) MTEALISAALNQTQPEFLAGG-----	-WAAGNATTKOSITKTGFO
P2YR_MELGA	(1) MTEALISAALNQTQPEFLAGG-----	-WAAGNASTKOSITKTGFO
P2YR_RAT	(1) MTEVPWSAVPNGTDAEFLAGLGSLWGNSTIASTA AVSSSFRCALIKTGFO	
Q9Y271	(1) -----MDETG-----	-NLTVSSATCHDTIDDER
GPRH_HUMAN	(1) -----MNGLEVAPPG-----	-LITNFSLATAEQCGQETPHE

51 100

HGPRBMY11	(22) REEEPIVYLILIFEWGVLGNGLSITYVFEQPYKKSTSVDNLFMENLAISDLLE	
HGPRBMY11v1	(38) REEEPIVYLILIFEWGVLGNGLSITYVFLQPYKKSTSVDNLFMENLAISDLLE	
P2Y5_CHICK	(14) VTLVGOVESMVFVLGJANGVAIYIFTFTLKVVRNETTTYMENLAISDLLE	
P2YR_CHICK	(40) FYYLPTVYILVFIIGFLGNSVAIWMFVFHMRPWSGISVYMDENLAIADELY	
P2YR_MELGA	(40) FYYLPTVYILVFIIGFLGNSVAIWMFVFHMRPWSGISVYMDENLAIADELY	
P2YR_RAT	(51) FYYLPAVYILVFIIGFLGNSVAIWMFVFHMRPWSGISVYMDENLAIADELY	
Q9Y271	(23) NOVYSTLSMISWVGFEGNGFVIVAVLTKTYHKSAFOVYMINLAADLLC	
GPRH_HUMAN	(31) NMIEASFYILDFTIALVGNTIALWFIRDHKSGTPANVEIMHLAVADLSC	

101 150

HGPRBMY11	(72) IISTLPFRADDYERGSNWIFGDIACRIMSYSIYVNMYSSIYFLTVESVVRF	
HGPRBMY11v1	(88) IISTLPFRADDYERGSNWIFGDIACRIMSYSIYVNMYSSIYFLTVESVVRF	
P2Y5_CHICK	(64) VETLPFPRIYEVVVRN-WPFGDVIECKTSVTLFYINMYGSILFLTCISVDRF	
P2YR_CHICK	(90) VLTLPALEIYYFNKTDWIFGDVMCKLQRFIFHVNEYGSILFLTCISVHRY	
P2YR_MELGA	(90) VLTLPALEIYYFNKTDWIFGDVMCKLQRFIFHVNEYGSILFLTCISVHRY	
P2YR_RAT	(101) VLTLPALEIYYFNKTDWIFGDVMCKLQRFIFHVNLGYGSILFLTCISAHRY	
Q9Y271	(73) VCTLPLRLRVVYYVHKGIWLFGDFLCRLSTYALYVNLYCSIFFMTAMSFFRC	
GPRH_HUMAN	(81) VLVLPTREVYHFSGNHWPFGETACRLTGFLFYLNMYASTYFLTCISADRF	

151 200

HGPRBMY11	(122) LAMVHPERLIHVTSIRSAWIICGIIWILIMASSIMELDS---GSEONGSV	
HGPRBMY11v1	(138) LAMVHPERLIHVTSIRSAWIICGIIWILIMASSIMELDS---GSEONGSV	
P2Y5_CHICK	(113) LAIVHPERSKTERIKRNARIVCVAVVWITVLAGSTIPASFQSTNRQNNTEQ	
P2YR_CHICK	(140) TGVVHPLKSLGREKKKNAVYVSSIWVALVVAVIAPIFLFYSGTGVRNKT	
P2YR_MELGA	(140) TGVVHPLKSLGREKKKNAVYVSSIWVALVVAVIAPIFLFYSGTGVRNKT	
P2YR_RAT	(151) SGVVYPLKSLGRKKKNAIVVSVIVWLIWVVAISPILFYSGTGIRKAKTV	
Q9Y271	(123) IAIIVFPVQNIILVTOOKKARFVCVGIWIFVILTSSPFLMAKPQKDEKNNTK	
GPRH_HUMAN	(131) LAIVHPKSLKERRPLYAHLACAFIWWVVAVAMAPELLVSPOTVQTNHTVV	

201 250

HGPRBMY11	(169) TSCLE--LNLYKIAKIQTMMNYIAALVVGCLIPPFETISICYLLIIRVILKVE	
HGPRBMY11v1	(185) TSCLE--LNLYKIAKIQTMMNYIAALVVGCLIPPFETISICYLLIIRVILKVE	
P2Y5_CHICK	(163) RTCFENFPESTWKTYLISRIVFIEITVGFFIPLIENVTGSTMVPIINKPL	
P2YR_CHICK	(190) TCYDT--TADEYLRSYFVYSMCITVFMECIPLFIVILGCYGLIVKALIYKD	
P2YR_MELGA	(190) TCYDT--TADEYLRSYFVYSMCITVFMECIPLFIVILGCYGLIVKALIYKD	
P2YR_RAT	(201) TCYDS--TSDEYLRSYFLYYSMCITVAMFCIPLFIVILGCYGLIVRALEYKD	
Q9Y271	(173) CFEPP--QDNQTKNHLVLYHVSFLVGFILPFVIIIIVCYTMILLTILKKS	
GPRH_HUMAN	(181) CLQLY-----REKAHHALVSLAVAFTEPFITTTCYLLIIRSIQGL	

Figure 2B

	251	300
HGPRBMY11	(217) VPESGLRVSHRKALTTIITLIIFFLCFLPYHTLRTVEL	-----T ₁ WKV
HGPRBMY11v1	(233) VPESGLRVSHRKALTTIITLIIFFLCFLPYHTLRTVEL	-----T ₁ WKV
P2Y5_CHICK	(213) TLSRNKLS-KKKVLMKIEVHLVIFCFCFVPYNELILYSLMR	--TQIWIN
P2YR_CHICK	(238) EDNSPLR--RKSIVYEVIVLTVFAVSYLPFHVMKTENLRARLDEQTPO	M
P2YR_MELGA	(238) EDNSPLR--RKSIVYEVIVLTVFAVSYLPFHVMKTENLRARLDEQTPO	M
P2YR_RAT	(249) EDNSPLR--RKSIVYEVIVLTVFAVSYLPFHVMKTENLRARLDEQTPO	M
Q9Y271	(221) MKKNLSS-HKKAIGMIMVTAALVSEMPYHIQRTIHLHFLHN	-ETKP
GPRH_HUMAN	(224) RVEKRLK---TKAVRMIAIVLAIFLVCEVPYHVNRSVVYLHYR	--SHGAS
	301	350
HGPRBMY11	(261) GLCKDRHKALVITLALAAACFNPLILYFAGENFKDRIKSALRKGHPO	
HGPRBMY11v1	(277) GLCKDRHKALVITLALAAACFNPLILYFAGENFKDRIKSALRKGHPO	
P2Y5_CHICK	(260) CSVVTAVRTMYPVTLCTIAVSNCDFDPIVYYFTSDTNSELDK	--KQQ--VH
P2YR_CHICK	(285) CAFNDKVYATYQVTRGCLASLNSCVDPILYFLAGDTFRRRLSRATRKSSRR	
P2YR_MELGA	(285) CAFNDKVYATYQVTRGCLASLNSCVDPILYFLAGDTFRRRLSRATRKSSRR	
P2YR_RAT	(296) CDFNDRVYATYQVTRGCLASLNSCVDPILYFLAGDTFRRRLSRATRKASRR	
Q9Y271	(267) CDSVLRMOKSVVITLSLAASNCDFDPLLYFGGGNFRKRLS- T FRKHSL	S
GPRH_HUMAN	(269) CATQRTEALANRITSCLTSLNGAIDPIMYFFVAEKFRHALCNLLCGKRLK	
	351	379
HGPRBMY11	(311) KAK-TKCVFPVSVWLRKETRV-----	
HGPRBMY11v1	(327) KAK-TKCVFPVSVWLRKETRV-----	
P2Y5_CHICK	(306) QNT-----	
P2YR_CHICK	(335) SEP-NVQSKSEEMTLNLTEYKQNGDTSL	
P2YR_MELGA	(335) SEP-NVQSKSEEMTLNLTEYKQNGDTSL	
P2YR_RAT	(346) SEA-NLQSKSEEMTLNLSEFKQNGDTSL	
Q9Y271	(316) SVT-YVPRKKASLPEKGEEICKV-----	
GPRH_HUMAN	(319) GPPPSFEGKTNESSLSAKSEL-----	

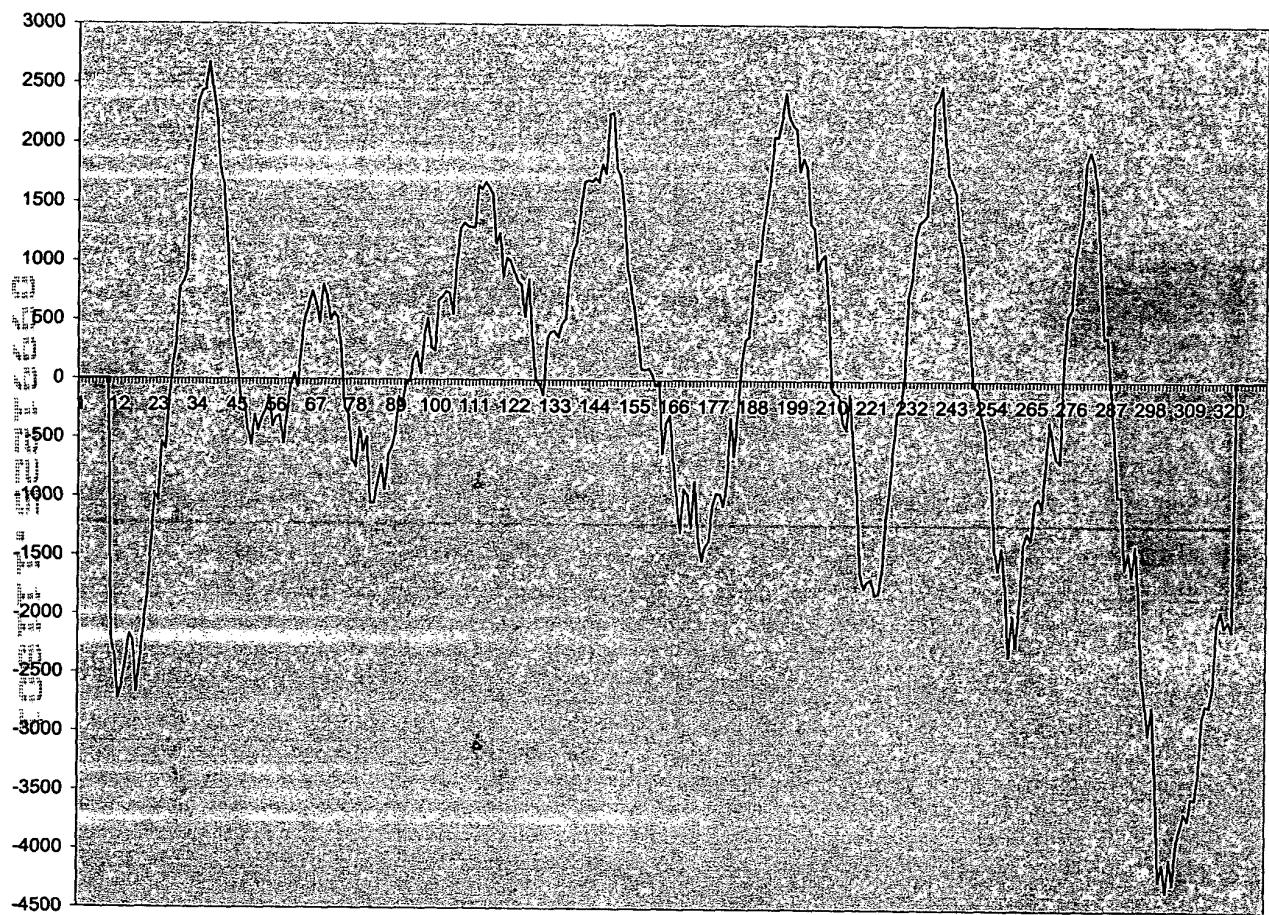
Figure 3

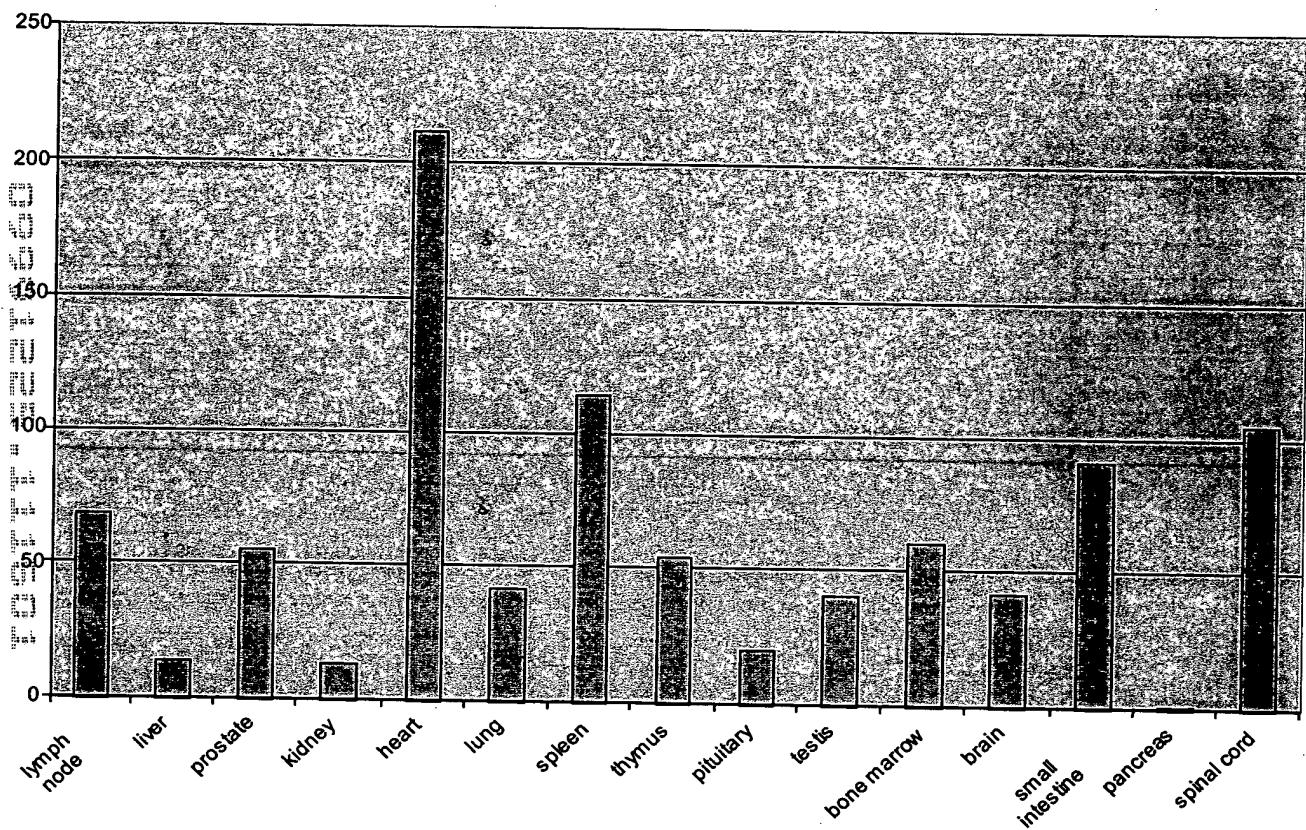
Figure 4.**Expression Profiling of Novel Human GPCR, HGPRBMY11**

Figure 5.**HGPRBMY11**

Protein	Genbank ID	Identities	Similarities
human cysteinyl leukotriene receptor	gi 11422069	37%	49%
chick purinergic receptor 5	gi P32250	36%	46%
human G-protein-coupled receptor GPR17	gi Q13304	36%	46%
chick purinergic receptor	gi P34996	30%	45%
turkey purinergic receptor	gi P49652	30%	45%
rat purinergic receptor	gi P49651	30%	44%

HGPRBMY11v1

Protein	Genbank ID	Identities	Similarities
human cysteinyl leukotriene receptor	gi 11422069	37.2%	49%
chick purinergic receptor 5	gi P32250	36.7%	46.1%
human G-protein-coupled receptor GPR17	gi Q13304	36.2%	46.1%
chick purinergic receptor	gi P34996	29.5%	43.9%
turkey purinergic receptor	gi P49652	29.8%	44.2%
rat purinergic receptor	gi P49651	29.6%	44%

Figure 6A

1	ATGGAGAGAAAATTATGTCCTTGCACCACCATCCATCTCGTATCAGAAATGGAACCAAAT	60
1	M E R K F M S L Q P S I S V S E M E P N	20
61	GGCACCTTCAGCAATAACAACAGCAGGAACACTGCACAATTGAAAATTCAAGAGAGAATT	120
21	G T F S N N N S R N C T I E N F K R E <u>F</u>	40
121	TTCCCATTGTATATCTGATAATATTTCTGGGAGCTTGGGAAATGGGTGTCCATA	180
41	<u>F P I V Y L I I F F W G V L G N G L S I</u>	60
181	TATGTTTCCTGCAGCCTTATAAGAACGTCACATCTGTGAACGTTTCATGCTAAATCTG	240
61	<u>Y V F L Q P Y K K S T S V N V F M L N L</u>	80
241	GCCATTCAGATCTCCTGTTCATAGCACGCTCCCTCAGGGCTGACTATTATCTTAGA	300
81	<u>A I S D L L F I S T L P F R A D Y Y L R</u>	100
301	GGCTCCAATTGGATATTGGAGACCTGGCTGCAGGATTATGTCTTATTCTTGATGTC	360
101	G S N W I F G D L A C R I M S Y S L Y <u>V</u>	120
361	AACATGTACAGCAGTATTTATTCCTGACCGTGCTGAGTGTGCGTTCTGGCAATG	420
121	<u>N M Y S S I Y F L T V L S V V R F L A M</u>	140
421	GTTCACCCCTTCGGCTTCTGCATGTCACCAGCATCAGGAGTGCCTGGATCCTCTGTGG	480
141	<u>V H P F R L L H V T S I R S A W I L C G</u>	160
481	ATCATATGGATCCTTATCATGGCTTCCTCAATAATGCTCCTGGACAGTGGCTCTGAGCAG	540
161	<u>I I W I L I M A S S I M L L D S G S E Q</u>	180
541	AACGGCAGTGTACATCATGCTTAGAGCTGAATCTCTATAAAATTGCTAACAGTCAGACC	600
181	N G S V T S C L E L N L Y K <u>I A K L Q T</u>	200
601	ATGAACTATATTGCCTTGGTGGCTGCCATTTCACACTCAGCATCTGT	660
201	<u>M N Y I A L V V G C L L P F F T L S I C</u>	220
661	TATCTGCTGATCATTGGGTTCTGTTAAAGTGGAGGTCCCAGAACATGGGGCTGGGGTT	720
221	<u>Y L L I I R V L L K V E V P E S G L R V</u>	240
721	TCTCACAGGAAGGCACtgaccaccatcatCACCTGATCATCTCTTCTGTGTTTC	780
241	S H R K <u>A L T T I I I T L I I F F L C F</u>	260
781	CTGCCCTATCACACACTGAGGACCGTCCACTGACGACATGGAAAGTGGTTATGCAA	840
261	<u>L P Y H T L R T V H L T T W K V G L C K</u>	280
841	GACAGACTGCATAAGCTTGGTTATCACACTGGCCTGGCAGCAGCCAATGCCTGCTTC	900
281	D R L H K <u>A L V I T L A L A A A N A C F</u>	300

Figure 6B

901 AATCCTCTGCTCTATTACTTTGCTGGGGAGAATTAAAGGACAGACTAAAGTCTGCACTC 960
301 N P L L Y Y F A G E N F K D R L K S A L 320

961 AGAAAAGGCCATCCACAGAACAGCAAAGACAAAGTGTGTTCCCTGTTAGTGTGGTTG 1020
321 R K G H P Q K A K T K C V F P V S V W L 340

1021 AGAAAGGAAACAAGAGTATAA 1041
341 R K E T R V 346

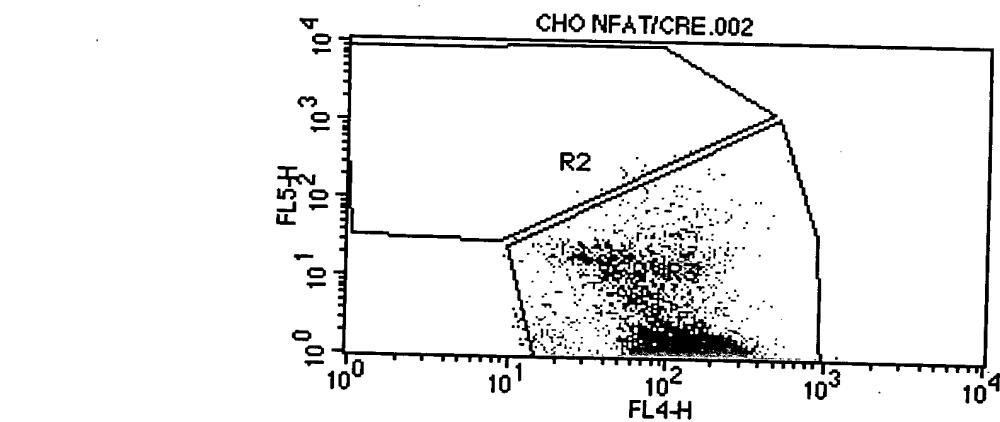
Figure 7

Figure 8

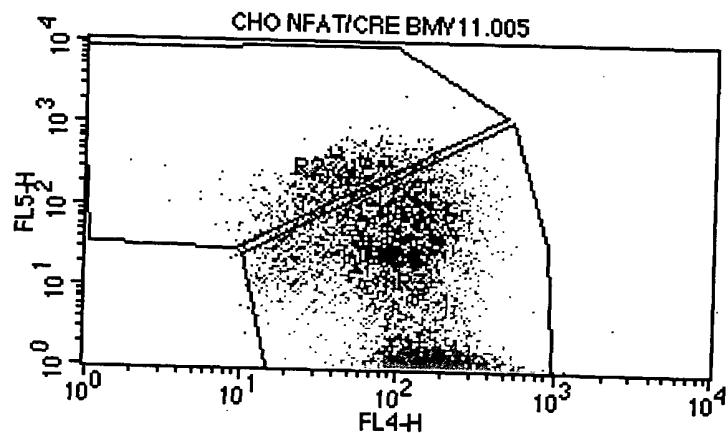


Figure 9

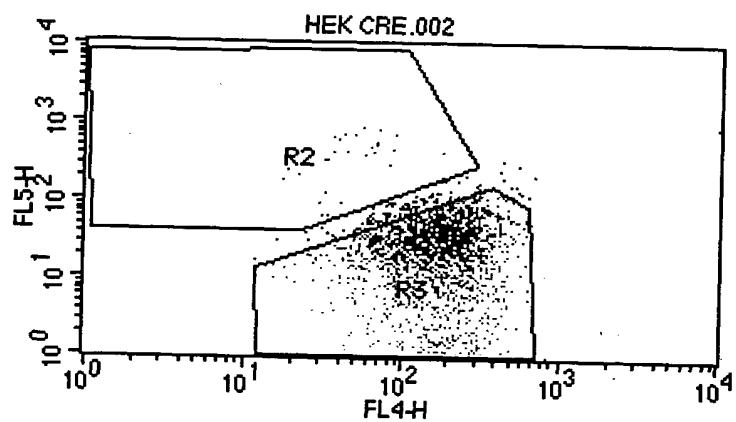


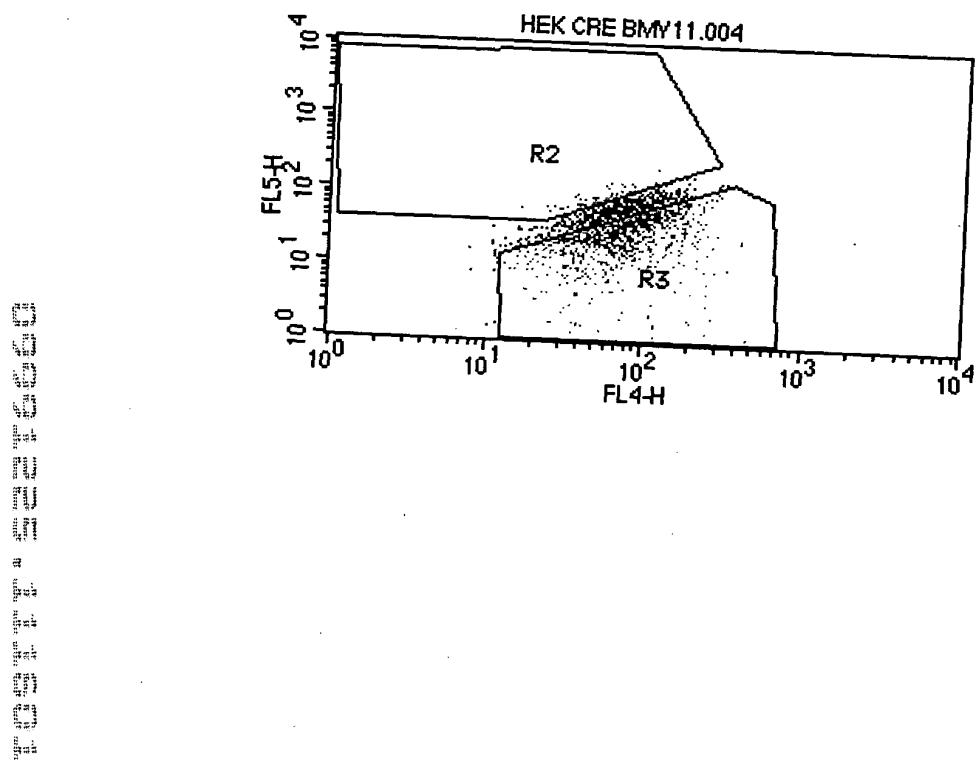
Figure 10

Figure 11

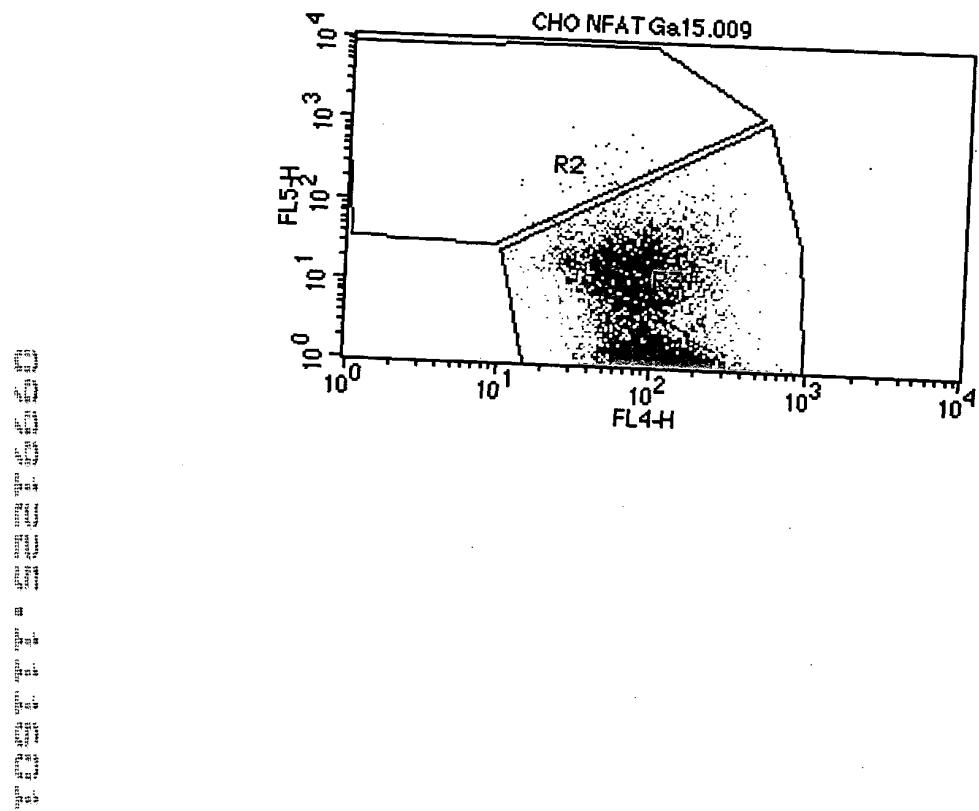


Figure 12

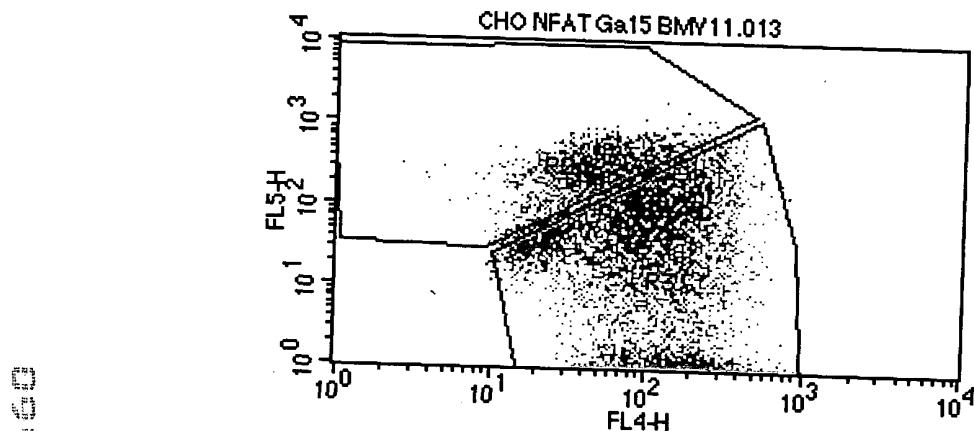
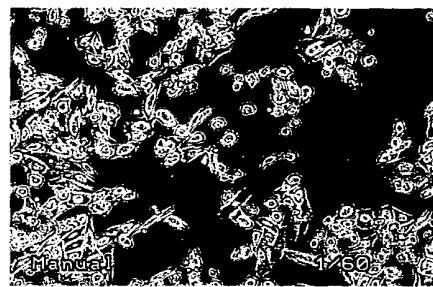


Figure 13

Cho NFAT Ga15 Control (Fluorescent vs. Bright Field)



Cho NFAT Ga15 BMY11 (Fluorescent vs. Bright Field)

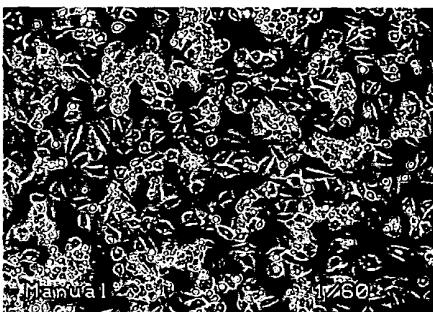
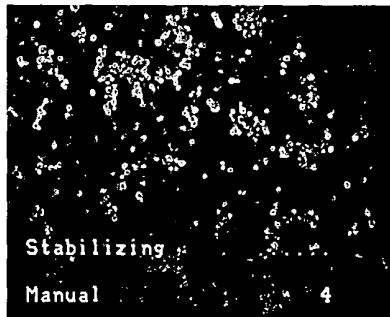
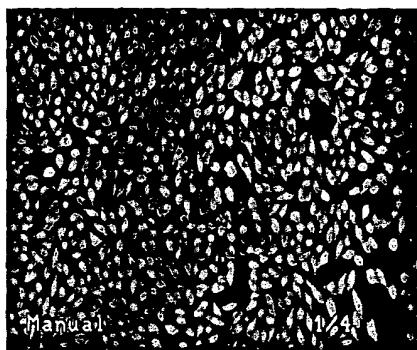
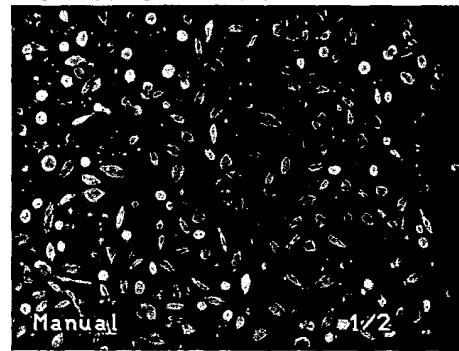


Figure 14

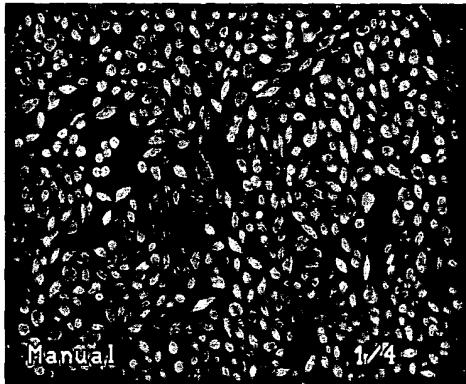
a. Cho-NFAT CRE



b. Cho-NFAT CRE + F/T/P



c. Cho-NFAT CRE oGPCR-Intermediate



d. Cho-NFAT CRE oGPCR High

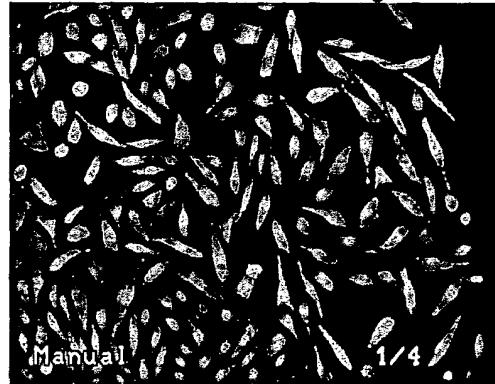


Figure 15A

1	ATGTCCTGCAACCACCATCCATCTCGTATCAGAAATGGAACCAAATGGCACCTTCAGCAAT	60
1	M S L Q P S I S V S E M E P N G T F S N	20
61	AACAACAGCAGGAACTGCACAATTGAAAATTCAAGAGAGAATTTCCTCCAATTGTATAT	120
21	N N S R N C T I E N F K R E F F P I V Y	40
121	CTGATAATATTTCTGGGAGTCTGGAAATGGGTGTCCATATATGTTTCCTGCAG	180
41	L I I F F W G V L G N G L S I Y V F L Q	60
181	CCTTATAAGAAGTCCACATCTGTGAACGTTTCATGCTAAATCTGCCATTTCAGATCTC	240
61	P Y K K S T S V N V F M L N L A I S D L	80
241	CTGTTCATAAGCAGCCTCCCTTCAGGGCTGACTATTATCTTAGAGGCTCCAATTGGATA	300
81	L F I S T L P F R A D Y Y L R G S N W I	100
301	TTTGGAGACCTGGCCTGCAGGATTATGTCTTATTCTTGATGTCAACATGTACAGCAGT	360
101	F G D L A C R I M S Y S L Y V N M Y S S	120
361	ATTTATTCCTGACCGTGCTGAGTGTGCGTTCTGGCAATGGTCACCCCTTCGG	420
121	I Y F L T V L S V V R F L A M V H P F R	140
421	CTTCTGCATGTCACCACGATCAGGAGTGCCTGGATCCTCTGTGGGATCATATGGATCCTT	480
141	L L H V T S I R S A W I L C G I I W I L	160
481	ATCATGGCTCCTCAATAATGCTCCTGGACAGTGGCTCTGAGCAGAACGGCAGTGTCACA	540
161	I M A S S I M L L D S G S E Q N G S V T	180
541	TCATGCTTAGAGCTGAATCTCTATAAAATTGCTAACGCTGCAGACCATGAACTATATTGCC	600
181	S C L E L N L Y K I A K L Q T M N Y I A	200
601	TTGGTGGTGGCTGCCTGCTGCCATTTCACACTCAGCATCTGTTATCTGCTGATCATT	660
201	L V V G C L L P F F T L S I C Y L L I I	220
661	CGGGTTCTGTTAAAGTGGAGGTCCCAGAACATGGGGCTGCGGGTTCTCACAGGAAGGCA	720
221	R V L L K V E V P E S G L R V S H R K A	240
721	CTGACCACCATCATCACCTGATCATCTTCTTGTGTTCTGCCATCACACA	780
241	L T T I I I T L I I F F L C F L P Y H T	260
781	CTGAGGACCGTCCACTTGACGACATGGAAAGTGGTTATGCAAAGACAGACTGCATAAA	840
261	L R T V H L T T W K V G L C K D R L H K	280
841	GCTTTGGTTATCACACTGGCCTTGGCAGCAGCCAATGCCCTGCTCAATCCTCTGCTCTAT	900
281	A L V I T L A L A A A N A C F N P L L Y	300

Figure 15B

901 TACTTGCTGGGAGAATTTAAGGACAGACTAAAGTCTGCACTCAGAAAAGGCCATCCA 960
301 Y F A G E N F K D R L K S A L R K G H P 320

961 CAGAAGGCAGACAAAGTGTGTTCCCTGTTAGTGTGGTTGAGAAAGGAAACAAGA 1020
321 Q K A K T K C V F P V S V W L R K E T R 340

1021 GTATAA 1026
341 V 341